

	L #	Hits	Search Text	DBs
1	L1	14035	(scatter\$3 gather\$3) near10 (bit byte element item)	USPAT; US-PGPUB
2	L2	144	1 near20 mask\$3	USPAT; US-PGPUB
3	L3	5584	(scatter\$3 gather\$3) near10 (bit byte element item)	EPO; JPO; DERWENT
4	L4	44	3 near20 mask\$3	EPO; JPO; DERWENT; IBM_TDB

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Document ID	U	Title	Current OR
1 US 20040 04701 4 A1	<input type="checkbox"/>	In-line holographic mask for micromachining	359/15
2 US 20040 03813 5 A1	<input checked="" type="checkbox"/>	Photolithographic mask and methods for producing a structure and of exposing a wafer in a projection apparatus	430/5
3 US 20040 02573 3 A1	<input checked="" type="checkbox"/>	EUV lithographic projection apparatus comprising an optical element with a self-assembled monolayer, optical element with a self-assembled monolayer, method of applying a self-assembled monolayer, device manufacturing method and device manufactured thereby	101/494
4 US 20040 02313 0 A1	<input checked="" type="checkbox"/>	Test photomask, flare evaluation method, and flare compensation method	430/5
5 US 20040 01756 8 A1	<input checked="" type="checkbox"/>	Absolute measurement centrifuge	356/338
6 US 20040 01668 6 A1	<input checked="" type="checkbox"/>	Absolute measurement centrifuge	210/94
7 US 20040 01197 5 A1	<input checked="" type="checkbox"/>	Sensors and methods for high-sensitivity optical particle counting and sizing	250/574
8 US 20030 23526 5 A1	<input checked="" type="checkbox"/>	High spatial resolution X-ray computed tomography (CT) system	378/4
9 US 20030 19769 0 A1	<input checked="" type="checkbox"/>	Computer input system	345/179
10 US 20030 17190 8 A1	<input checked="" type="checkbox"/>	Simulation and timing control for hardware accelerated simulation	703/16
11 US 20030 15553 2 A1	<input checked="" type="checkbox"/>	Electron-beam lithography	250/492 .3
12 US 20030 15284 6 A1	<input checked="" type="checkbox"/>	Photolithographic mask	430/5
13 US 20030 10772 0 A1	<input checked="" type="checkbox"/>	Continuously adjustable neutral density area filter	355/77
14 US 20030 09191 1 A1	<input checked="" type="checkbox"/>	Photolithography mask and method of fabricating a photolithography mask	430/5
15 US 20030 07752 1 A1	<input checked="" type="checkbox"/>	Method for producing scatter lines in mask structures for fabricating integrated electrical circuits	430/5
16 US 20030 03444 5 A1	<input checked="" type="checkbox"/>	Light guide for use with backlit display	250/227 .11
17 US 20030 02207 4 A1	<input checked="" type="checkbox"/>	Photolithographic mask	430/5

generating unit 165. The CG data image generating unit 165  
FIG. 56 shows the configuration of the CG data image  
generation unit 163 shown in FIG. 53. The CG data

in detail. FIG. 56 shows the configuration of the CG data  
management unit 163 shown in FIG. 53 is completed below  
than a processor or by a process of a computer other  
For example, each unit can be structured by hardware other  
from an external computer system or initialized from a  
is preliminary limited. Furthermore, they can be added  
in a RAM or initialized CG data stored in a ROM can be stored  
system. Displayed CG data stored in a ROM can be stored  
so a display request, for example, for external computer  
invention is not limited to these input units, and can receive  
example, a mouse and a keyboard. However, the present  
In the above described process, data are input from, for  
161.

55 in the CG data storage unit 162 and the change data buffer  
163 obtains CG data reading to the input change, and stores  
change data buffer 161. Thus, the CG data management unit  
stores the change data in the change data buffer 161. Then, the  
CG data management unit 165 initializes the change data unit 164 to  
store the same information stored in the first processing unit 23, the CG data  
unit 18 and the second processing unit 195. In this case, the CG data  
consistency of the information stored in the first processing  
in the CG data storage unit 162. Furthermore, to keep the  
a change arising during a display process and then are stored  
in the CG data storage unit 162. Thus, the CG data include  
The CG data storage unit 195 stores the received CG data  
the CG data storage unit 195.

50 change data. Then, it transmits the CG data to be stored to  
data and obtains all a part of the changed CG data as  
data calculating unit 192 performs a calculating process using the  
and outputs them to the CG calculating unit 192. The CG  
corresponding data stored in the CG data storage unit 162,  
calculation method. The CG data storage unit 193 reads  
unit 193 to output data corresponding to the CG data reading unit 193 reads  
The CG calculating unit 192 receives the CG data reading unit 192  
as a calculation method, etc. to the CG calculating unit 192  
input information, and outputs necessary information such  
input interpreting unit 191 interprets the contents of the  
as follows. First, upon receipt of data from a keyboard, the  
Each unit of the CG data management unit 163 is operated  
the CG data reading unit 193 receives data stored in the  
corresponding data in the change data buffer 161.

55 CG data storage unit 162. The change data buffer 161  
result. The CG data reading unit 192 of the  
request, and notifies the CG calculating unit 192 of the  
CG data storage unit 162 upon receipt of a data retrieval  
The CG data reading unit 193 retrieves data stored in the  
changes data in the change data buffer 161.

50 that is, change data have arisen, the first processor 170 stores  
the change data in a shared memory 178 through the shared  
memory interface (IF) 176, and stores the change data in the  
CG data RAM 185, and a shared memory 184, a changed CG  
data RAM 185, and a shared memory 186 through the shared  
memory 178 are read by the second processor 180 to  
change the image which has been generated and displayed  
shared memory 178 are read by the second processor 180 to  
CG data RAM 175. Then, the change data stored in the  
memory interface (IF) 176, and stores the change data in the  
the change data in a shared memory 178 through the shared  
memory 178 are read by the second processor 180 to  
change the image which has been generated and displayed  
shared memory 178 are read by the second processor 180 to  
CG data RAM 175. Then, the change data stored in the  
memory interface (IF) 176, and stores the change data in the  
CG data RAM 175, and stores the change data in the CG data RAM  
175. The CG data stored in the CG data RAM 175 stores CG data to be displayed  
Additionally, this system is provided with the ROM 172  
when the CPU 171 executes program in the ROM 172  
changed. The working RAM 173 is a working area used  
whether or not the currently displayed information should be  
data, CG information from an operator, etc., and determines  
data, CG display information from the IOP 174 such as CG  
receives display information from the IOP 174 stored in the ROM 72.  
The CPU 171 executes a program stored in the ROM 72,

50 bus 177. In the first processor 170, the CG data been changed,  
that is, change data have arisen, the first processor 170 stores  
the change data in a shared memory 178 through the shared  
memory 178 are read by the second processor 180 to  
change the image which has been generated and displayed  
shared memory 178 are read by the second processor 180 to  
CG data RAM 175, and a shared memory 176. These  
RAM 173, a working random access memory (RAM) 174, a CG data  
memory (ROM) 172, a working random access memory  
processor 170 comprises a CPU 171, a read only  
processor 170.

FIG. 54 shows a practical configuration according to the

but the present invention is not limited to this application  
A processor is used in the above described embodiment,  
the entire process.  
a high speed Furthermore, parallel processing can speed up  
association with a change, thereby performing the process at  
Therefore, all CG data are not required to be transmitted in  
processor 180 displays CG data after updating them  
processor 170 transmits only change data and the first pro-  
processor 180 separately store CG data, and the first pro-  
cessor 170 and the second  
As described above, the first processor 170 and the second  
example, a parallel arrangement in term units).

data in a format in which images are easily generated (for  
CG data RAM 185 in the second processor 180 can store the  
change (for example, a tree structure). The change  
CG data in a format in which a user can easily give the  
the CG data RAM 175 in the first processor 170 can store the  
can be the same as stored in the RAM. The storage format  
CG data are stored in the above described CG data RAM  
and is displayed on the CRT.

a card for the video signal is added to, for example,  
from the dot data. The video signal is added to the attached drawings  
The video RAM 184 is a card for generating a video RAM 184,  
changed CG data, and writes them into the video RAM 184.  
processor 180 generates dot data to be displayed from the  
data in the changed CG data RAM 185. Then, the second  
shared memory interface (IF) 186, and adds them to the CG  
change data stored in the shared memory 180 through the  
first processor 170, the second processor 180 reads the  
If change data are stored in the shared memory 178 by the  
stored in the change CG data RAM 185.

the generation of images (that is, changed CG data) are  
images using the working RAM 183. The CG data used in  
executes a program stored in the ROM 182 and generates  
CPU 181. The CPU 181 of the second processor 180  
These truths are commonly connected to a bus 187 of the  
data 182, a working RAM 183, a video RAM 184, a changed CG  
The second processor 180 comprising a CPU 181, a ROM  
change the image which has been generated and displayed  
shared memory 178 are read by the second processor 180 to  
CG data RAM 175, and stores the change data in the  
memory interface (IF) 176, and stores the change data in the  
the change data in a shared memory 178 through the shared  
that is, change data have arisen, the first processor 170 stores  
this is, change data have arisen, the first processor 170 stores  
180.

175. The CG data stored in a RAM 185 in the second processor  
As described later, the CG data stored in the CG data RAM  
175, the CG data stored in the CG data RAM 175 stores CG data to be displayed  
Additionally, this system is provided with the ROM 172  
when the CPU 171 executes program in the ROM 172  
changed. The working RAM 173 is a working area used  
whether or not the currently displayed information should be  
data, CG information from an operator, etc., and determines  
data, CG display information from the IOP 174 such as CG  
receives display information from the IOP 174 stored in the ROM 72.  
The CPU 171 executes a program stored in the ROM 72,

177. In the first processor 170, the CG data been changed,  
that is, change data have arisen, the first processor 170 stores  
the change data in a shared memory 178 through the shared  
memory 178 are read by the second processor 180 to  
change the image which has been generated and displayed  
shared memory 178 are read by the second processor 180 to  
CG data RAM 175, and a shared memory 176. These  
RAM 173, a working random access memory (RAM) 174, a CG data  
memory (ROM) 172, a working random access memory  
processor 170 comprises a CPU 171, a read only  
processor 170.

FIG. 54 shows a practical configuration according to the

	Document ID	U	Title	Current OR
18	US 20020 15401 8 A1	<input checked="" type="checkbox"/>	Fire detector unit	340/630
19	US 20020 14969 1 A1	<input checked="" type="checkbox"/>	Aperture coded camera for three dimensional imaging	348/335
20	US 20020 11660 2 A1	<input checked="" type="checkbox"/>	Partial bitwise permutations	712/223
21	US 20020 05727 6 A1	<input checked="" type="checkbox"/>	Data processing apparatus, processor and control method	345/555
22	US 20020 04870 8 A1	<input checked="" type="checkbox"/>	Method of patterning sub-0.25lambda line features with high transmission, "attenuated" phase shift masks	430/5
23	US 20020 03920 9 A1	<input checked="" type="checkbox"/>	IN-LINE HOLOGRAPHIC MASK FOR MICROMACHINING	359/15
24	US 20020 03395 2 A1	<input checked="" type="checkbox"/>	Control of position and orientation of sub-wavelength aperture array in near-field microscopy	356/512
25	US 20020 02797 4 A1	<input checked="" type="checkbox"/>	X-RAY EXPOSURE METHOD INCLUDING M-SHELL AND/OR L-SHELL ABSORPTION EDGES AT PREDETERMINED WAVELENGTHS	378/145
26	US 20020 02401 1 A1	<input checked="" type="checkbox"/>	Method for correcting opaque defects in reticles for charged-particle-beam microlithography, and reticles produced using same	250/307
27	US 20020 02149 2 A1	<input checked="" type="checkbox"/>	Stereoscopic image display method and stereoscopic image display apparatus using it	359/463
28	US 20020 02145 1 A1	<input checked="" type="checkbox"/>	Scanning interferometric near-field confocal microscopy with background amplitude reduction and compensation	356/511
29	US 20020 01658 1 A1	<input checked="" type="checkbox"/>	Absorbent article with improved surface fastening system	604/386
30	US 20010 03140 4 A1	<input checked="" type="checkbox"/>	Process for fabricating a projection electron lithography mask and a removable, reusable cover for use therein	430/5
31	US 20010 02147 7 A1	<input checked="" type="checkbox"/>	Method of manufacturing a device by means of a mask phase-shifting mask for use in said method	430/5
32	US 20010 01493 6 A1	<input checked="" type="checkbox"/>	Data processing device, system, and method using a table	711/221
33	US 67244 62 B1	<input checked="" type="checkbox"/>	Capping layer for EUV optical elements	355/53
34	US 66878 01 B1	<input checked="" type="checkbox"/>	Adaptive copy pending off mode	711/162
35	US 66678 09 B2	<input checked="" type="checkbox"/>	Scanning interferometric near-field confocal microscopy with background amplitude reduction and compensation	356/511

FIG. 69 shows the operation of the second processing unit 23, the CG data image generating unit 165 of the second processing unit 23, the CG data image generating unit 23 performs a CG data image generating process in step S191 in which image data representing an image to be displayed are generated from CG data. If the CG image data generating process is performed at the second processing unit 23, the CG data image generating unit 165 of the second processing unit 23 starts its operation.

61. **61.** **c**, the first processing unit 18 starts its change data in the change data buffer as buffer has stored the change data after the change data is processed by the change data buffer.

challenge each other first in the change and solving process in step S179.

If the input interpreting process in step S171 has been completed, the CG calculating process in step S172 is started. The CG calculating process in step S172 is passed to the processes in steps S173 through 179. First, in step S176, the CG data reflecting process is performed, and the CG data reflecting in a calculation are reflected in step S177, the CG data changed (change data) are obtained according to the function selected in step S174, the amount of a change obtained in step S175 and the present CG data. That is, obtained is the result that moving the mouse 3 dots to the right has made a change of 30° from the original process in step S178. Then, the change data are stored in the CG data storage unit 122 in the CG data storing process in step S179. To a viewpoint of 45°, The change data are viewpoints of 15°. In the change data stored in the CG data storage unit 122, the CG data reflecting process in step S171 is performed again.

indicating that the mouse has moved 3 dots to the right.

be performed within a short time and the entire process can be completed quickly.

According to the fourth embodiment, the first processing unit 18 and the second processing unit 23 perform respective functions in the units shown in FIGS. 33, 35, and 36. If the processes are performed by processors, then the processes of each unit shown in FIGS. 33, 35, and 36 is performed corresponding to each of the processes shown in FIGS. 57, 58, 59, 60, and 61 performed by a processor. These processes can be also performed in multiple processors of the computer system. It each process of the processes detailed in a computer system, the multiple processes of the second processing unit 23 is performed by a process of the multiple processes of the first processing unit 18 and the transmission between the processes because data only can be transmitted between processes because each stores CG data. The transmission can

According to the present invention, CG data are stored separately in the CG data storage unit 162 and the channelized CG data storage unit 164. Accordingly, the information transmitted through the change data buffer 161 can be changed data only, and the amount of the information can be considerably reduced, thereby taking shorter time for transmission. In addition, the change data buffer 161 can be missioned and cascaded in a high speed process. Since, for example, change information provided continuously for the device shown in FIG. 5 can be sequentially processed in parallel in a pipeline system, the entire process can be completed more quickly.

The CG data image generated using unit 165 shown in FIG. 56 operates as follows. When the damage data stored in the change data buffer 161 are received by the image generating unit 202, the image generating unit 202 generates the damage data image unit 203 to update damage unit 161 based on the damage data image unit 165. When the damage data image unit 203 is received by the damage data storage unit 164, the damage data image unit 203 is stored in the damage data storage unit 164. The damage data image unit 203 is read from the damage data storage unit 164 and displayed on the monitor 102. The damage data image unit 203 is also stored in the damage data storage unit 164.

formatting part of the second processing unit 23 comprises a changeable CG data retarding unit 20, an image generating unit 202 a changeable data retarding unit 203, and a changeable CG data processing unit 201, which are connected in series along the flow of data, and indicates the direction of control and the flow of data.

Document ID	U	Title	Current OR
36 US 66313 69 B1	<input checked="" type="checkbox"/>	Method and system for incremental web crawling	707/4
37 US 66181 74 B2	<input checked="" type="checkbox"/>	In-line holographic mask for micromachining	359/15
38 US 65768 87 B2	<input checked="" type="checkbox"/>	Light guide for use with backlit display	250/227 .11
39 US 65528 05 B2	<input checked="" type="checkbox"/>	Control of position and orientation of sub-wavelength aperture array in near-field microscopy	356/511
40 US 65499 59 B1	<input checked="" type="checkbox"/>	Detecting modification to computer memory by a DMA device	710/22
41 US 65446 94 B2	<input checked="" type="checkbox"/>	Method of manufacturing a device by means of a mask phase-shifting mask for use in said method	430/5
42 US 65102 01 B2	<input checked="" type="checkbox"/>	Apparatus for measuring the pulse transmission spectrum of elastically scattered x-ray quantities	378/86
43 US 64983 51 B1	<input checked="" type="checkbox"/>	Illumination system for shaping extreme ultraviolet radiation used in a lithographic projection apparatus	250/492 .2
44 US 64825 55 B2	<input checked="" type="checkbox"/>	Method of patterning sub-0.25.lambda. line features with high transmission, "attenuated" phase shift masks	430/5
45 US 64687 00 B1	<input checked="" type="checkbox"/>	Transfer mask blanks and transfer masks exhibiting reduced distortion, and methods for making same	430/5
46 US 64485 69 B1	<input checked="" type="checkbox"/>	Bonded article having improved crystalline structure and work function uniformity and method for making the same	250/493 .1
47 US 64443 98 B1	<input checked="" type="checkbox"/>	Method for manufacturing a semiconductor wafer using a mask that has several regions with different scattering ability	430/296
48 US 63973 79 B1	<input checked="" type="checkbox"/>	Recording in a program execution profile references to a memory-mapped active device	717/140
49 US 63813 00 B1	<input checked="" type="checkbox"/>	Exposure mask, exposure mask manufacturing method, and semiconductor device manufacturing method using exposure mask	378/35
50 US 63777 26 B1	<input checked="" type="checkbox"/>	Transverse mode transformer	385/28
51 US 63723 93 B2	<input checked="" type="checkbox"/>	Process for fabricating a projection electron lithography mask and a removable, reusable cover for use therein	430/5
52 US 63666 39 B1	<input checked="" type="checkbox"/>	X-ray mask, method of manufacturing the same, and X-ray exposure method	378/34
53 US 63553 84 B1	<input checked="" type="checkbox"/>	Mask, its method of formation, and a semiconductor device made thereby	430/5
54 US 63303 33 B1	<input checked="" type="checkbox"/>	Cryptographic system for wireless communications	380/207
55 US 63128 54 B1	<input checked="" type="checkbox"/>	Method of patterning sub-0.25 lambda line features with high transmission, "attenuated" phase shift masks	430/5
56 US 62971 69 B1	<input checked="" type="checkbox"/>	Method for forming a semiconductor device using a mask having a self-assembled monolayer	438/736
57 US 62788 47 B1	<input checked="" type="checkbox"/>	Aperture coded camera for three dimensional imaging	396/324
58 US 62617 26 B1	<input checked="" type="checkbox"/>	Projection electron-beam lithography masks using advanced materials and membrane size	430/5



Document ID	U	Title	Current OR
59 US 62515 43 B1	<input checked="" type="checkbox"/>	Process for fabricating a projection electron lithography mask and a removable reusable cover for use therein	430/5
60 US 62464 51 B1	<input checked="" type="checkbox"/>	Stereoscopic image displaying method and stereoscopic image apparatus	349/15
61 US 61514 18 A	<input checked="" type="checkbox"/>	Method for imaging an area of investigation	382/274
62 US 61272 11 A	<input checked="" type="checkbox"/>	Method of manufacturing transistor	438/158
63 US 60885 45 A	<input checked="" type="checkbox"/>	Real-image type viewfinder	396/373
64 US 59904 98 A	<input checked="" type="checkbox"/>	Light-emitting diode having uniform irradiance distribution	257/99
65 US 59897 60 A	<input checked="" type="checkbox"/>	Method of processing a substrate utilizing specific chuck	430/22
66 US 59867 42 A	<input checked="" type="checkbox"/>	Lithographic scanning exposure projection apparatus	355/53
67 US 59367 29 A	<input checked="" type="checkbox"/>	Photo detector assembly for measuring particle sizes	356/336
68 US 59069 02 A	<input checked="" type="checkbox"/>	Manufacturing system error detection	430/30
69 US 58895 80 A	<input checked="" type="checkbox"/>	Scanning-slit exposure device	355/67
70 US 58778 58 A	<input checked="" type="checkbox"/>	Textured surface monitoring and control apparatus	356/496
71 US 58768 81 A	<input checked="" type="checkbox"/>	Manufacturing method for mask for charged-particle-beam transfer or mask for x-ray transfer	430/5
72 US 58669 13 A	<input checked="" type="checkbox"/>	Proximity correction dose modulation for E-beam projection lithography	250/492 .22
73 US 58384 33 A	<input checked="" type="checkbox"/>	Apparatus for detecting defects on a mask	356/364
74 US 58312 74 A	<input checked="" type="checkbox"/>	Apparatus for image transfer with charged particle beam, and deflector and mask used with such apparatus	250/492 .23
75 US 58300 64 A	<input checked="" type="checkbox"/>	Apparatus and method for distinguishing events which collectively exceed chance expectations and thereby controlling an output	463/22
76 US 58183 37 A	<input checked="" type="checkbox"/>	Masked passive infrared intrusion detection device and method of operation therefore	340/567
77 US 57981 94 A	<input checked="" type="checkbox"/>	Masks for charged-particle beam microlithography	430/5
78 US 57891 19 A	<input checked="" type="checkbox"/>	Image transfer mask for charged particle-beam	430/5
79 US 57738 38 A	<input checked="" type="checkbox"/>	Apparatus for image transfer with charged particle beam, and deflector and mask used with such apparatus	250/492 .23
80 US 57738 37 A	<input checked="" type="checkbox"/>	Apparatus for image transfer with charged particle beam, and deflector and mask used with such apparatus	250/492 .23
81 US 57701 80 A	<input checked="" type="checkbox"/>	Bridge-substituted tropanes for methods of imaging and therapy	424/1.8 1

Then, the CG calculating unit 195 to store the three-dimensional coordinate of the CG data requests the CG data storing unit 195 to store the three-dimensional coordinate of

three-dimensional coordinate set of the viewpoint:

The velocity vector gives a more compact increment for the viewpoint coordinate of the present viewpoint. The three-dimensional coordinates of the velocity vector to the three-dimensional three-dimensional coordinates of a new viewpoint by adding each dimension, the CG calculating unit 192 calculates the three-dimensional coordinates of a new viewpoint.

velocity vector: (9.980, 0.520, 0.0)

Then, the CG calculating unit 192 calculates the base vector after the movement based on a new movement direction and speed. At this time, a velocity vector is generated by multiplying each element of the new movement vector by the speed. The resultant vector is then added to the mean direction vector by the speed. The result is then passed to the interpolation unit 193.

movement direction vector:

The movement direction vector is extended toward the positive direction of the x axis. The CG calculating unit 192 changes the direction vector by + $\delta$  to the right based on the data received from the CG data reading unit 193 and the data received from the CG interpreting unit 191 indicating a 3-plane-electron movement to the right. That is, the changed movement direction vector is represented as follows.

3-dimensional coordinates of viewpoint:  
 $(100, 0, 0)$  (100, 200, 0)  
 movement direction vector:  
 $(0, 0, 0, 0, 0, 0)$  speed 100

The above described operation of the drive stimulator is limited, thus, the CG data are retarded. The expanded below-dimensional coordinates of the viewpoint, the required three-dimensional coordinates of the viewpoint, the movement direction vector, and the speed are set as follows.

The *decurrent* of the above described interval, that is, a *performed* change *key*, is an identifier of the viewpoint associated with a *root object*. Based on the *decurrent*, the retrieval is performed as follows. First, the *reticular process* starts with a *reticular start object* (*root object*) (step S211). Then, it is determined whether or not the *object* has any child object, that can control its retimed to the *process* in step S212 to retrieve the child object. If the *object* has no child object, then it is controlled to the *process* in step S212 to retrieve the child object. If the *object* has any child objects, it is checked whether or not the *object* has no child objects, if it is checked whether or not the *object* has any younger brother object (step S214). If yes, control is returned to the *process* in step S212 to retrieve the younger brother object. Unless the *parent object* is a *root object* (step S216), it yes, the *interval* is determined to have failed. Unless the *parent object* is a *root object*, the *processes* in and after step S214 are per-

The data of the fourth embodiment form a tree structure. 65  
Moreover, in the position, 66  
HIC. 67 shows a data structure according to the C language. 67  
HIC. 68 is a flowchart of retrieving in an object tree. 68

Assuming that the mouse has moved to the right the position of the mouse in the memory. mouse has moved by a 3-pixel increment, the input incrementing unit 191 of the CG data management unit 163 determines that the direction of the viewpoint has changed to the right with the change amount of the viewpoint has changed. With the data, the CG calculation unit 192 generates the CG data representing unit 193 to refer to the present viewpoint data and the viewpoint movement data to perform a calculation process. That is, it provides a reticleful function with a viewpoint identifier and receives a pointer to a structure of a viewpoint identifier and receives a pointer to a structure of the CG data representing unit 193 retrieves the CG data reflecting unit 192 and updates a three-dimensional coordinate, a direction vector and a speed of the mouse.

If the mouse is moved, the cursor is passed to the *45* *spatial function*, and the moving distance and direction of the mouse are calculated based on the position of the mouse after the movement and the position of the mouse previously stored in a memory. The previous position is stored as the *46* *spatial function*, and the moving distance and direction of the mouse are passed to the *47* *cursor control*.

is set as the main angle of the handle.  
Assume that a user moves the mouse button 3 pixels  
in this case, the following determination is made.  
A mechanism for monitoring the movement of a mouse  
designed to cover the movement in a specific area of the  
X-WINDOW SYSTEM of UNIX, that is, control is passed to the  
window of the X-WINDOW. Control is passed to the  
window when the mouse is moved in a  
specialized function to the X-WINDOW, it is determined that the moving direction of the  
window has been passed to the

The instruction from the program is not limited to the received from the keyboard data input mechanism 233.

That is, it operates as if viewpoint data were constantly

data display device 210 generates and displays image data 10

use. According to the information from the program, the CG

course and generating a scene without any operation by a

program for moving a viewpoint along a predetermined

some gearlocking mechanism 234 can be provided with a

program as well as an input by, for example, a mouse. The 5

embodiment is designed to receives an input through a

The CIO data management unit [63] according to the fourth

at a high speed

associated with the change. Thus, the data can be displayed

Document ID	U	Title	Current OR
82 US 57662 12 A	<input checked="" type="checkbox"/>	Disposable diaper	604/361
83 US 57284 92 A	<input checked="" type="checkbox"/>	Mask for projection system using charged particle beam	430/5
84 US 57270 64 A	<input checked="" type="checkbox"/>	Cryptographic system for wireless communications	380/270
85 US 57189 91 A	<input checked="" type="checkbox"/>	Method for making photomasks having regions of different light transmissivities	430/5
86 US 56891 17 A	<input checked="" type="checkbox"/>	Apparatus for image transfer with charged particle beam, and deflector and mask used with such apparatus	250/492 .23
87 US 56577 54 A	<input checked="" type="checkbox"/>	Apparatus for non-invasive analyses of biological compounds	600/316
88 US 56317 50 A	<input checked="" type="checkbox"/>	Scattering type liquid crystal device	349/110
89 US 56107 05 A	<input checked="" type="checkbox"/>	Doppler velocimeter	356/28.5
90 US 55984 10 A	<input checked="" type="checkbox"/>	Method and apparatus for accelerated packet processing	370/469
91 US 55571 05 A	<input checked="" type="checkbox"/>	Pattern inspection apparatus and electron beam apparatus	250/310
92 US 55348 93 A	<input checked="" type="checkbox"/>	Method and apparatus for using stylus-tablet input in a computer system	345/179
93 US 55324 96 A	<input checked="" type="checkbox"/>	Proximity effect compensation in scattering-mask lithographic projection systems and apparatus therefore	250/492 .22
94 US 55176 60 A	<input checked="" type="checkbox"/>	Read-write buffer for gathering write requests and resolving read conflicts based on a generated byte mask code	711/117
95 US 55127 59 A	<input checked="" type="checkbox"/>	Condenser for illuminating a ringfield camera with synchrotron emission light	250/492 .1
96 US 55063 59 A	<input checked="" type="checkbox"/>	Cocaine analogues and their use as cocaine drug therapies and therapeutic and imaging agents for neurodegenerative disorders	546/130
97 US 55023 06 A	<input checked="" type="checkbox"/>	Electron beam inspection system and method	250/310
98 US 55003 12 A	<input checked="" type="checkbox"/>	Masks with low stress multilayer films and a process for controlling the stress of multilayer films	430/5
99 US 54869 19 A	<input checked="" type="checkbox"/>	Inspection method and apparatus for inspecting a particle, if any, on a substrate having a pattern	356/484
100 US 54716 28 A	<input checked="" type="checkbox"/>	Multi-function permutation switch for rotating and manipulating an order of bits of an input data byte in either cyclic or non-cyclic mode	712/223
101 US 54397 81 A	<input checked="" type="checkbox"/>	Device fabrication entailing synchrotron radiation	430/311
102 US 54384 05 A	<input checked="" type="checkbox"/>	Device and method for testing optical elements	356/239 .2
103 US 54302 92 A	<input checked="" type="checkbox"/>	Pattern inspection apparatus and electron beam apparatus	250/310
104 US 53844 63 A	<input checked="" type="checkbox"/>	Pattern inspection apparatus and electron beam apparatus	250/398

**FIG. 73** shows the configuration of the important portion of the three-dimensional object display device according to the fifth embodiment of the CG data display device of the present invention. The fifth embodiment consists of the fifth embodiment of the CG data display device of FIG. 1, as included in the conventional device shown in FIG. 1. As illustrated, object data structure storage unit 263 and a display-formatting data structure comprising an object presentation window. The fifth embodiment of the CG data display device of the present invention can be embodied in the fifth embodiment of the CG data display device according to the second embodiment of the present invention. The fifth embodiment of the CG data display device of the present invention can be embodied in the fifth embodiment of the CG data display device according to the third embodiment of the present invention.

As described above, a process performed in a CG data display device can be divided into two portions for each of what is a processing unit is provided according to the fourth embodiment. Since each processing unit is provided with a processing unit is provided according to the fourth embodiment. Since each processing unit is provided with CG data, only change data relative to a change has to be transmitted, thereby shortening the time taken for transmission and successfully realizing a high-speed process. Furthermore, the two processing units operate in parallel and the amount of data transmitted between the two processes are considerably reduced. Therefore, the image display process can be performed at a high speed with dynamic images expressed realistically and static images changed immediately after a change of scene.

Furthermore, the first processing unit #18 and the second processing unit #23 shown in FIG. 53 can be designed separately as a logic circuit. According to the embodiment shown in FIG. 54, external CG data are stored in a RAM. It displays contents are limited, however, they can be printed mainly stored in a ROM and transmitted to a RAM which

HIC, 71 shows an example of another configuration according to the fourth embodiment in HIC, 71, a unit also according to the fourth embodiment in HIC, 71, a unit also shown in HIC, 54 is assigned a corresponding number, shown in HIC, 54 is assigned a corresponding number, data are accumulated through the shared memory 17B. According to the embodiment shown in FIG. 71, data are transmitted through a communication circuit 241 of a first processor 24A through a communication circuit 242 of a second processor 24B and a communication circuit 243 between the communication processor 245 from the first processor 241 and the second processor 245. A buffer 243 is provided between the communication circuit 243 and the communication circuit 242 of the second processor 245. The buffer 243 corresponds to the changeable data buffer other than the buffer 245.

is, the items such as a back form, bottom form, camera position, etc. are defined as data at an equal level, thereby centralizing the access time in a display process.

According to the fourth embodiment, the storage format can be either the same or different between the CG data stored in memory 162 and the same or different CG data stored in memory 161. That is, even if the changed CG data stored in memory 161 is the same as the original CG data stored in memory 162, they are stored at a different address.

Then, the image generating unit 202 transmits the three-dimensional coordinates of the viewpoint stored in the changeable CG data storage unit 204 to the changeable CG data storage unit 202. The three-dimensional coordinates of the viewpoint stored in the changeable CG data storage unit 204 update and stores the instruction from the user to update the data by the operation unit 203 and reissues it to update the changeable CG data storage unit 202.

three-dimensional coordinates of the viewpoints:

After the CG data storage unit 195 has stored the details, the CG calculating unit 192 requests the change data store 194 to store change data 1912 consisting of a new viewpoint. The three-dimensional coordinates of the three-dimensional viewpoint are calculated by the change data store 194. That is, the image processing unit 202 of the second processing unit 23, which generates image data 201, reads the three-dimensional coordinates of the three-dimensional viewpoint stored by the change data store 194, and outputs them to the image processing unit 202 of the second processing unit 23. The image processing unit 202 of the second processing unit 23, which generates image data 201, performs three-dimensional coordinate conversion of the three-dimensional viewpoint to the three-dimensional coordinate system of the image processing unit 202, and outputs the converted three-dimensional coordinate data to the image processing unit 201.

(109, 980, 20a 22a, a, 6)  
 (110, 980, a 252, a, 0)  
 movement direction vector

The CG data structure unit 195 stores three data in the CG data structure unit 192. The stored three-dimensional coordinate of the viewpoint and the movement direction vector are kept.

Document ID	U	Title	Current OR
105 US 53314 46 A	<input checked="" type="checkbox"/>	Liquid crystal optical element and a laser projection apparatus using polymer dispersed liquid crystal	349/5
106 US 53092 73 A	<input checked="" type="checkbox"/>	Yag laser mask marker	359/202
107 US 52989 69 A	<input checked="" type="checkbox"/>	Combined optical train for laser spectroscopy	356/340
108 US 52989 68 A	<input checked="" type="checkbox"/>	Combined optical train for laser spectroscopy	356/338
109 US 52821 51 A	<input checked="" type="checkbox"/>	Submicron diameter particle detection utilizing high density array	702/26
110 US 52242 14 A	<input checked="" type="checkbox"/>	BuIffet for gathering write requests and resolving read conflicts by matching read and write requests	710/39
111 US 51626 45 A	<input checked="" type="checkbox"/>	Photographic scanner with reduced susceptibility to scattering	250/208 .1
112 US 51230 95 A	<input checked="" type="checkbox"/>	Integrated scalar and vector processors with vector addressing by the scalar processor	712/218
113 US 50991 17 A	<input checked="" type="checkbox"/>	Scanning tunnel microscope capable of detecting electrons emanating from a specimen	250/306
114 US 50281 35 A	<input checked="" type="checkbox"/>	Combined high spatial resolution and high total intensity selection optical train for laser spectroscopy	356/340
115 US 50170 16 A	<input checked="" type="checkbox"/>	Method of processing asbestos chips and apparatus	366/139
116 US 49242 54 A	<input checked="" type="checkbox"/>	Film printing/reading system	355/20
117 US 49221 15 A	<input checked="" type="checkbox"/>	Fluorescent glass dosimeter	250/484 .5
118 US 49120 22 A	<input checked="" type="checkbox"/>	Method for sloping the profile of an opening in resist	430/396
119 US 48869 74 A	<input checked="" type="checkbox"/>	Mark detecting device for detecting the center of a mark by detecting its edges	250/559 .36
120 US 48146 26 A	<input checked="" type="checkbox"/>	Method for high precision position measurement of two-dimensional structures	250/559 .3
121 US 48126 20 A	<input checked="" type="checkbox"/>	Concentrated radiant energy heat source unit	392/421
122 US 47969 97 A	<input checked="" type="checkbox"/>	Method and system for high-speed, 3-D imaging of an object at a vision station	356/608
123 US 47766 93 A	<input checked="" type="checkbox"/>	Foreign substance inspecting system including a calibration standard	356/237 .3
124 US 47714 70 A	<input checked="" type="checkbox"/>	Noise reduction method and apparatus for medical ultrasound	382/266
125 US 47647 76 A	<input checked="" type="checkbox"/>	Thermo transfer printer	347/232
126 US 47644 41 A	<input checked="" type="checkbox"/>	Photo-mask for production of substrate for optical memory element	430/5
127 US 47640 13 A	<input checked="" type="checkbox"/>	Interferometric apparatus and method for detection and characterization of particles using light scattered therefrom	356/484

In FIG. 76A, the depth of the hierarchy is 3 levels, and the number of objects is 6. On the other hand, in FIG. 76B, the depth of the hierarchy is 2 levels, and the number of objects is 2 by compressing the object data structure.

HG. 76B shows an example of a compressing process. The structure of the transformation matrix of the object shown in HG. 76A-HG. 76B shows the hierarchical data structure at a time of adding an object. HG. 76B shows the structure in HG. 76A-HG. 76A shows the hierarchical data structure of the transformation matrix of the object shown in HG. 76A-HG. 76B shows the object and stored, thereby the object data structure can be modified. The child objects can be expanded into their parent child objects according to the changed transformation matrix. The child objects according to the changed transformation matrix M2 of the parent objects do not need to be modified.

In FIG. 2, the depth of the hierarchy of the object tree is described expansion.

As shown in FIG. 75, the four objects as the feet of the chair in the bottom panel and the back panel similarly inherit color B of the parent legs. Accordingly, these objects can be coded into the parent and stored, and they maintain the inheritance characteristics of their generation. Since the bottom panel and the back panel inherit color B of the parent legs, they can be copied to a new node as a copy of the parent node. However, the legs object does not inherit the parent node. Therefore, it cannot be copied as a copy of the parent node. In addition, the legs object is copied to a child node as a copy of the parent object. As a result, the legs object is copied to a child node as a copy of the parent object. This shows the final display format hierarchical object data structure processed by the compression function through the above steps.

Regarding the transformation matrix, an object can take numerous forms in the environment, such as a chair or a book. The transformation matrix is an absolute coordinate system that relates to a world coordinate system. If the matrix is multiplied by a position vector, it will result in a new position vector. This is because the transformation matrix is a relative coordinate system. It is relative to the world coordinate system. Therefore, a relative transformation matrix is calculated by multiplying the transformation matrix by the relative transformation matrix. Therefore, a relative transformation matrix does not show invariance of an object in the display-format hierarchy object data structure set.

A number of objects use the inheritance characteristics for color and texture. That is, utilizing the inheritance characteristics for color and texture can considerably reduce the number of objects and decrease the inheritance cost.

Typical attributes having inharmonic characteristics of an object are color, texture, and transformation matrix. The attribute set having the inharmonic characteristics is form.

Compacting a hierarchical object data structure is expanding a child object including an attribute of a parent object and storing the child object in the parent object. This expanding process copies the attribute of the child object to its parent object. However, this process should be performed by checking a user's access request so as not to affect an operation in a user's modeling process.

The process of compressing the hierarchical object data structure according to the fifth embodiment is very unique. That is, when the hierarchical object data structure in the editing-formatted hierarchical object data structure unit 262 is updated through the object generalizing editing unit 261 or a user's model instance unit 263, the object generalizing editing unit 263 compresses the editing-formatted hierarchical object data structure based on object data structure, and simultaneously updates the display-format hierarchical object data structure based on object data structure.

Thus, the display-format hierarchical data structure are sequentially updated, compressed, rendered at a user's display institution, and actually displayed. The display format hierarchical object data structure is considered by its own internal data structure in the same manner as the stringing a high-speed process.

263 is connected between an editing-format interfunctional  
shown in Fig. 73, the object data structure comprising unit  
264 outputs display CG data to an object display process unit  
265 display-format interfunctional object data structure storage unit  
266 object data structure storage unit 262 and a display-format  
object data structure storage unit 261 and a display-format  
display-format interfunctional object data structure storage unit  
267. The

	Docum ent ID	U	Title	Current OR
128	US 47100 25 A	<input checked="" type="checkbox"/>	Process for characterizing suspensions of small particles	356/343
129	US 46348 76 A	<input checked="" type="checkbox"/>	Object position detecting apparatus using accumulation type sensor	250/548
130	US 45485 00 A	<input checked="" type="checkbox"/>	Process and apparatus for identifying or characterizing small particles	356/336
131	US 44578 93 A	<input checked="" type="checkbox"/>	Automated apparatus for photometrically detecting immunological agglutinating reactions	422/64
132	US 44179 46 A	<input checked="" type="checkbox"/>	Method of making mask for structuring surface areas	216/2
133	US 43922 36 A	<input checked="" type="checkbox"/>	System and method of migratory animal identification by fluorescence spectroscopy of element coded implanted tags, and tags used therein	378/45
134	US 43428 17 A	<input checked="" type="checkbox"/>	Mask for structuring surface areas, and method of making it	430/5
135	US 43259 10 A	<input checked="" type="checkbox"/>	Automated multiple-purpose chemical-analysis apparatus	422/64
136	US 41468 83 A	<input checked="" type="checkbox"/>	Display	340/815 .44
137	US 40506 38 A	<input checked="" type="checkbox"/>	Radioactive matter containing waste gas treating installation	241/222
138	US 39725 98 A	<input checked="" type="checkbox"/>	Multifaceted mirror structure for infrared radiation detector	359/853
139	US 39366 94 A	<input checked="" type="checkbox"/>	Display structure having light emitting diodes	313/500
140	US 39056 75 A	<input checked="" type="checkbox"/>	Optical systems having stop means for preventing passage of boundary wave radiation	359/434
141	US 38732 04 A	<input checked="" type="checkbox"/>	Optical extinction photoanalysis apparatus for small particles	356/39
142	US 37448 78 A	<input checked="" type="checkbox"/>	LIQUID CRYSTAL MATRIX WITH CONTRAST ENHANCEMENT	349/177
143	US 37137 43 A	<input checked="" type="checkbox"/>	FORWARD SCATTER OPTICAL TURBIDIMETER APPARATUS	356/338
144	US 36142 31 A	<input checked="" type="checkbox"/>	OPTICAL AEROSOL COUNTER	356/37



	Docum ent ID	U	Title	Current OR
1	JP 20030 50207 A	<input type="checkbox"/>	SENSOR FOR PRINT INSPECTION	
2	JP 20020 96461 A	<input checked="" type="checkbox"/>	DEVICE FOR IMAGE RECORDING, METHOD FOR CONTROLLING IMAGE RECORDING, AND RECORDING MEDIUM	
3	JP 20001 91992 A	<input checked="" type="checkbox"/>	MASKING TAPE AND METHOD FOR MASKING USING THE TAPE	
4	JP 20001 00674 A	<input checked="" type="checkbox"/>	METHOD FOR MARKING SEMICONDUCTOR WAFER	
5	JP 11179 962 A	<input checked="" type="checkbox"/>	ELECTROOPTICAL SIGNAL CONVERTING APPARATUS	
6	JP 10193 145 A	<input checked="" type="checkbox"/>	LASER MARKING DEVICE	
7	JP 10096 700 A	<input checked="" type="checkbox"/>	APPARATUS FOR INSPECTING FOREIGN MATTER	
8	JP 09106 065 A	<input checked="" type="checkbox"/>	SUBSTRATE CLEANING DEVICE AND METHOD	
9	JP 07198 625 A	<input checked="" type="checkbox"/>	PRINT INSPECTING SENSOR	
10	JP 07020 793 A	<input checked="" type="checkbox"/>	PRODUCTION OF BLACK MASK FILTER FOR LED DISPLAY BY SCREEN PRINTING	
11	JP 05343 808 A	<input checked="" type="checkbox"/>	MANUFACTURE OF OPTICAL SEMICONDUCTOR ELEMENT	
12	JP 05241 011 A	<input checked="" type="checkbox"/>	PRODUCTION OF COLOR FILTER FOR LIQUID CRYSTAL DISPLAY	
13	JP 05079 913 A	<input checked="" type="checkbox"/>	STRAY LIGHT FREE FOURIER SPECTROPHOTOMETER	
14	JP 04194 908 A	<input checked="" type="checkbox"/>	LIQUID CRYSTAL DISPLAY DEVICE	
15	JP 03017 692 A	<input checked="" type="checkbox"/>	COLOR DISPLAY DEVICE	
16	JP 02271 644 A	<input checked="" type="checkbox"/>	CARRYING DEVICE OF GLASS SUBSTRATE	
17	JP 01259 244 A	<input checked="" type="checkbox"/>	FOREIGN MATTER DETECTION SYSTEM	
18	JP 01173 891 A	<input checked="" type="checkbox"/>	FLUORESCENT GLASS DOSIMETER	
19	JP 01096 601 A	<input checked="" type="checkbox"/>	DEFECT CORRECTING METHOD FOR COLOR FILTER	
20	JP 63070 110 A	<input checked="" type="checkbox"/>	DISTANCE MEASURING APPARATUS	
21	JP 60024 568 A	<input checked="" type="checkbox"/>	COLOR TONER CONCENTRATION DETECTOR	

HG, 90 shows an example of a structure obtained after compressing the hierarchical object data structure shown in HG, 88. In HG, 88 showing the state before the compression, the depth of the hierarchy is 3, and the number of objects is 6. On the other hand, in HG, 90 showing the

HG's, 88 and 89 show examples of hierarchical object structures relating to a word transformation matrix. In HGs, 88 and 89, the color and texture are omitted, and only the relative transformation matrix is considered as an attribute of each object. The word transformation matrix is, unlike the relative transformation matrix, generated based on the origin of the word coordinate system. Therefore, a number of combinations of a parent and children among objects can be defined. For example, in HG, 88, four legs are objects of combinations of a parent and children among the child objects of the top parent. However, each leg does not have to be necessary the child of the top parent. As shown in HG, 89, it can be a child object of the desk which is an object at a higher level.

FIG. 8 shows an example of the hierarchical object data structure relating to the relative transformation matrix stored in the entity-format hierarchical object data structure stored at offset unit 262. In FIG. 87, the relative transformation matrix is at the top part is generated with the corner of the room set as the base point. Since the corner of the room set is at the top part, the relative transformation matrix is also a world transform of the world coordinate system, it is also a world transform motion matrix of the top part. The relative transformation motion matrix of the top part and the legs are defined with the center of the top part set as the base point. Since the relative transformation matrix is considered. Since the relative transformation matrix is omitted, and only the color and texture parameters of the top part are defined. The relative transformation matrix is represented by the position of the top part, the legs are defined with the center of the top part and the texture parameters of the legs are defined with the center of the top part and the legs between the legs.

Each world transformation matrix shown in FIG. 84 corresponds to the transformation matrix  $M_1$ , shown in FIG. 85. The center of the top panel 271 shown in FIG. 82 is moved from the origin to the point (100, 100, 45) according to the world transformation matrix (100, 100, 45). The origin of the leg shown in FIG. 83 is moved from the origin to the point (145, 55, 20) according to the world transformation matrix of the leg. The transformation relationship between the world motion matrix of the leg and the modeling coordinate system can be defined by an arbitrary affine transformation other than a parallel displacement if necessary. Then, a necessary change associated with the movement of a form can be made using the world transformation matrix, and each coordinate of the form need not be changed at all.

If user-selected lines are to be overlapped, a rotation and a parallel displacement are carried out so that the lines are overlapped. If it is necessary to set the lines in the same configuration, then a scale conversion is conducted using the length, while a scale conversion is conducted using the transformation matrix  $M_1$ , so that a length of a line to be overlapped, the lines are overlaid. The transformation is conducted in the above described manner.  $M_2$  are multiplied to the coordinates of each vertex of a mesh. The transformation matrices  $M_1$ ,  $M_2$ ,  $M_3$  and  $M_4$  and polyhedron is transferred in a direct-dimensional space, the polyhedron is to be modified in the above described manner.

The transformation matrix through which a three-dimensional object is transformed is used as follows. First, the transformation matrix  $M_{xy}$  and  $M_{xz}$  produce rotations such that each axis of coordinates  $M_{xy}$  and  $M_{xz}$  corresponds to a polygonal axis of a modified coordinate system of a polygonal to be modified can match a coordinate system of a polygonal to be modified. Then, a parallel net system of a coordinate polygonation. There, a parallel displacement is applied to the polygonation using the transformation matrix  $M$ .

In the second edition, the modernizing coordinate system was also considered a departure, the modernizing coordinate system being the one that was introduced in the first edition. The new coordinate system was introduced in the second edition, and it was used in the second edition of the book.

	Document ID	U	Title	Current OR
22	JP 59054 040 A	<input checked="" type="checkbox"/>	OPTICAL HEAD	
23	JP 58038 082 A	<input checked="" type="checkbox"/>	INFRARED-RAY IMAGE PICKUP DEVICE	
24	JP 57135 404 A	<input checked="" type="checkbox"/>	DISK DEFECT INSPECTING DEVICE	
25	JP 57130 471 A	<input checked="" type="checkbox"/>	MANUFACTURE OF METAL OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTOR	
26	DE 10127 689 A1	<input checked="" type="checkbox"/>	Generating integrated electrical circuit manufacturing mask structure scatter bars involves generating bars near edges or between edge pairs, checking and correcting separations	
27	WO 99329 21 A1	<input checked="" type="checkbox"/>	DISPLAY DEVICE FOR PROJECTOR AND METHOD OF MAKING AND USING A DISPLAY DEVICE	
28	WO 98216 29 A2	<input checked="" type="checkbox"/>	IN-LINE HOLOGRAPHIC MASK FOR MICROMACHINING	
29	WO 96055 03 A1	<input checked="" type="checkbox"/>	DEVICE FOR TESTING OPTICAL ELEMENTS	
30	JP 20031 14183 A	<input checked="" type="checkbox"/>	Production of light generation element for use in e.g. light microscope, involves forming scattering object mask on light propagation object, with which aperture is formed to hold micro scattering object	
31	DE 10127 689 A	<input checked="" type="checkbox"/>	Generating integrated electrical circuit manufacturing mask structure scatter bars involves generating bars near edges or between edge pairs, checking and correcting separations	
32	US 20020 02149 2 A	<input checked="" type="checkbox"/>	Stereoscopic image display method in TV, involves guiding display light from specific strip images of parallax image to observation position, through mask using lenticular lenses	
33	EP 10655 66 A	<input checked="" type="checkbox"/>	Electron beam drawing mask blank for integrated circuit, includes pattern supporting layer, electron beam scattering layer, etching stopper layer and support layer formed of preset element with preset film thickness	
34	WO 20005 4097 A	<input checked="" type="checkbox"/>	Active electro-optic filtering device for use with a welder's protection mask reduces light scattered from LCD filter element and has reduced operating voltage to give improved optical quality	
35	JP 11179 962 A	<input checked="" type="checkbox"/>	Electric-light signal converter for video printer - has mask member fixed to light emitting element holder, for cutting off scattered light	
36	US 58669 13 A	<input checked="" type="checkbox"/>	Proximity correction dose modulation for E-beam projection lithography - using a pattern defining mask containing sub-resolution scattering features	
37	US 58447 22 A	<input checked="" type="checkbox"/>	Polarization beam splitter for colour projection system - has wave blocking element arranged at bottom edge of mask and immersed in prismatic fluid, for minimizing scattering of incident electromagnetic wave	
38	US 57189 91 A	<input checked="" type="checkbox"/>	Multi-exposure photomask preparation with at least three levels of transmission - by forming high exposure photomask with a number of through holes and masked area, then forming a refractive light scattering optical element above it	
39	JP 09257 685 A	<input checked="" type="checkbox"/>	Photodetector for measuring particle size distribution in specimen - includes mask on light receiving surface to focus scattered light into fixed area of light receiving element	
40	JP 06148 652 A	<input checked="" type="checkbox"/>	Liq. crystal display element with improved display quality - has resin layer mixed with light scattering microparticles provided on substrate at picture-element-free region	
41	EP 55665 5 A	<input checked="" type="checkbox"/>	Grading and evaluating method for optical elements such as lenses - scanning rotated linear wedge shaped beam of white light on entire lens surface and detecting defect scattered light using CCD via mask	

3. The computer graphics data display device according to claim 1, wherein  
the volume of the viewpoint based on a relation between  
said state change calculating means calculates a moved-to  
volume of a viewpoint corresponding to the displayed object in  
the computer graphics world, wherein  
2. The computer graphics data display device according to claim 1, further comprising:  
 a. state change calculating means for calculating the state  
change of a displayed object in response to the attribute  
change of at least one related object in one of a plurality  
of at least one type of an external data structure  
movements of the displayed object in response to one of a  
change of a displayed object according to the attribute  
change calculating means for calculating the state  
means;  
 b. attribute memory means for storing the attribute  
change of at least one object set by said attribute defining setting  
means; and  
 c. attribute determining means for determining the attribute  
change for at least one object in the computer  
graphics world;

1. A computer graphics data display device for displaying  
a high speed display:  
 a. a compressing process is performed while maintaining an  
interlace characteristic in a modulating process. Simultaneously, a display-format object data structure is generated in generation unit 265 in accordance with the attribute data.  
 b. the attribute data structure is converted into a display-format object data structure in step 266, and used by the object display structure storage unit 267.  
 c. the attribute data structure is converted into a display-format object data structure in step 268, and used by the object display structure storage unit 269.  
 d. the attribute data structure is converted into a display-format object data structure in step 270, and used by the object display structure storage unit 271.  
 e. the attribute data structure is converted into a display-format object data structure in step 272, and used by the object display structure storage unit 273.  
 f. the attribute data structure is converted into a display-format object data structure in step 274, and used by the object display structure storage unit 275.  
 g. the attribute data structure is converted into a display-format object data structure in step 276, and used by the object display structure storage unit 277.  
 h. the attribute data structure is converted into a display-format object data structure in step 278, and used by the object display structure storage unit 279.  
 i. the attribute data structure is converted into a display-format object data structure in step 280, and used by the object display structure storage unit 281.  
 j. the attribute data structure is converted into a display-format object data structure in step 282, and used by the object display structure storage unit 283.  
 k. the attribute data structure is converted into a display-format object data structure in step 284, and used by the object display structure storage unit 285.  
 l. the attribute data structure is converted into a display-format object data structure in step 286, and used by the object display structure storage unit 287.  
 m. the attribute data structure is converted into a display-format object data structure in step 288, and used by the object display structure storage unit 289.  
 n. the attribute data structure is converted into a display-format object data structure in step 290, and used by the object display structure storage unit 291.  
 o. the attribute data structure is converted into a display-format object data structure in step 292, and used by the object display structure storage unit 293.  
 p. the attribute data structure is converted into a display-format object data structure in step 294, and used by the object display structure storage unit 295.  
 q. the attribute data structure is converted into a display-format object data structure in step 296, and used by the object display structure storage unit 297.  
 r. the attribute data structure is converted into a display-format object data structure in step 298, and used by the object display structure storage unit 299.  
 s. the attribute data structure is converted into a display-format object data structure in step 300, and used by the object display structure storage unit 301.

	Docum ent ID	U	Title	Current OR
42	JP 04197 650 A	<input checked="" type="checkbox"/>	Mfg. thermal head for printer - scattering sizes of heating-element portions of photo-mask, to prevent scattering in printing densities NoAbstract	
43	US 50281 35 A	<input checked="" type="checkbox"/>	Combined optical train for laser scattered light spectroscopy - uses pair of matched, novel optical elements, incorporating benefits of pinhole aperture and double lens, centre mask optical systems	
44	US 49120 22 A	<input checked="" type="checkbox"/>	Irradiating resist layer during manufacture of semiconductor devices - placing scattering element in path of radiation, modifying it to produce sloped edges in resist profile	



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